



From Discussion to Decision: A Five-Step C.L.E.A.R. Meeting Discipline and the Evidence Behind It

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Abstract – Meetings take up a huge portion of paid working time and there is limited measurement of the output of meetings. This article looks at a five step meeting agenda, summarised by the words C.L.E.A.R (core issue, latest numbers, expected outcome, action owner, review results). Peer-reviewed studies in organisational psychology and group research, published working papers, management standards and public meeting law were identified and checked for consistency, before being dated. Some of the findings reported are Goal clarity was found to predict task performance in top management groups. Employee surveys estimated the amount of unproductive meeting time at approximately 1/3 of the meeting time, and structured surgical briefings were found to reduce mortality and complications measurably. Costs are shown here at loaded labour rates and not based on published market rates as there are variations in published market rates. The article outlines the technologies used transcription, calendar metadata, task tracking and shared dashboards, and their limitations. It points out that national data on meeting time is missing, there are limited field experiments on bundled meeting rules, and there are limited data outside large English speaking white collar organisations. It should not be assumed the method has to be field tested. Readers are provided with a workable approach, a costing approach, and a research agenda for workplaces, regulators, and researchers.

Keywords: Meeting productivity, Goal clarity, Group decision-making, Accountability, After-action review, Organisational psychology, Labour productivity, Workplace governance.

1. INTRODUCTION

Ten people meet once per week for one hour each meeting 520 person hours per year. That one recurring calendar date is equivalent to approximately a quarter of a working year of 1800 hours of salary. Most organisations agree that spending and not auditing it ever again is acceptable. The duration of the meetings have been increasing for decades. In 2017, research revealed that executives spend almost 23 hours a week in meetings, which is less than half the amount of time they used to spend in the 60s under 10 hours. In 2007, a survey of 1,900 business leaders revealed that 72% of business leaders spend more time in meetings than they did five years ago, while 49% believe that this trend will continue. Academic estimates of the number of meetings held in the United States daily range from 11 million to 55 million, indicating the breadth of the range of estimates.

There has been no progress in perceived quality. The study of 150 senior managers from a range of industries found 71% of meetings were unproductive, 65% of meetings prevented them from completing their own task, 64% of meetings took away their uninterrupted thinking time and 62% of meetings did not achieve the opportunity to bring the team closer. The same sample of almost 200 senior executives reported that 17% of meetings were a good use of group and individual time. There are three

developments which ask the question pressing. Coordinating on the calendar has replaced the ability to do so at a desk in a remote both hybrid work environment. Calendar and conferencing systems create a record of the load of meetings, attendance and after hours work, and for the first time, the cost can be seen in most workplaces. With the advent of transcription and summarization tools, notes can be generated faster than a human minute taker, thus bringing up a more difficult question Notes of what, for whom, leading to what decision.



Fig -1: The Meeting Problem

The five step discipline discussed here can be summarised by the letters C.L.E.A.R core issue, latest numbers, expected outcome, action owner and review results. The five are all old. Each has a set of published literature related to goal setting and agendas, information sharing in groups, decision rules, responsibility assignment, and structured review. The letters bring sequence and memorability, which is important when a rule needs to withstand the onslaught of a hectic Tuesday. Readers will gain an understanding of what the evidence says and what it doesn't, a method for calculating costs that can be replicated with local salary data, the technologies involved at each step, their failure modes, comparisons with structured briefings in surgery and aviation, and what remains unmeasured. Claims are dated and referenced. If the figure is from a commercial survey, rather than a statistical agency, this is indicated as the level of trust that can be given to the number will vary. The purpose is not promotional if a reader can use the method on Monday and, in a quarter, determine if there's any difference.

2. OBJECTIVE

In the article, the author wants to accomplish four things. It explains the 5 steps of the C.L.E.A.R. method in operational terms to enable a chair, a team leader, or a committee secretary to implement it without training. It provides details of the published evidence supporting each step, the strength, and limitations



of this evidence. It offers a means of costing that any organisation can replicate based on their own payroll information, as well as the technologies, legal obligations, and economic considerations of meeting practice. It clearly communicates, without mincing its words, what is not yet known from current research, thereby helping researchers and policy makers to identify areas where research is required. The article doesn't say that the five letters have been tested in combination. That would be a lie and not having such a test is part of the argument.

3. METHODOLOGY

The information was collected in four layers and the data from each layer was treated separately.

The main evidence came from peer-reviewed research in organisational psychology, small group research, and medicine. These range from management group meetings on goal clarity published in a Scandinavian psychology journal in 2010, experimental research on meeting format published in an applied psychology journal in 1999, research on meeting satisfaction and job satisfaction published in a human resource management journal in 2010, to multi-country research on surgical checklists published in a medical journal in 2009. All were examined for sample size, design and setting and these are reported in the text and not concealed.

The second layer was formed by published reviews and working papers. The range estimates for the number of meetings per day and the average number of hours spent in meetings were provided by an academic study of workplace meetings in 2018. Working papers that are based on calendar and message metadata are referred to as working papers, as they have not undergone peer review.

The third level consisted of standards and statutes. The 2015 version of the international quality management standard includes a management review clause, which includes documented inputs, decisions, and actions. California law passed in 1953 calls for the local legislative bodies to place an agenda on the internet at least 72 hours prior to a regular meeting. These are documents to be verified not opinions.

The fourth layer was commercial surveys and is the weakest. In 2022 a university researcher with a software sponsor surveyed 632 workers from 20 industries and found that they spent 18 hours a week in meetings, and an average of six of those hours were deemed unnecessary. Cost extrapolations are based on the survey and salary assumptions and on the assumption that the hours that respondents reported as avoidable are recoverable, which is not an observed fact. The figures for national waste for meetings are widely quoted and are based on vendor surveys and not statistics agencies.

Market size is not quoted as there are no common estimates in the literature for collaboration and meeting technology and the numbers vary by several depending on which categories are included. Arithmetic examples are given in generic currency units to allow the reader to replace them with local currency units. No paraphrase of a source was used in a number that it is not in.

4. WHAT FIVE STEPS ASK A MEETING TO DO

Each letter serves as a precondition one or both a closing condition, each of which can be verified by someone who was not in the room.

Core issue is a written sentence that identifies the problem, opportunity, or question. The criteria for the test is whether the sentence can be read by an absent colleague, and the subject matter can be

predicted without further explanation. Headings like monthly update don't pass the test. A line like decide whether to extend the pilot in two districts past March passes it.

Latest numbers: The numbers which are relevant to the issue are circulated prior to the meeting and shown during the meeting with a source stated, definition stated and date stated. If there is no date on a number, it is an opinion in numeric form. If they can't agree on what number is authoritative, then the first agenda item is to name it, and they will save the hour that will be spent in circular argument.

Expected outcome: Chair announces, in advance, the outcome desired. There are six types that address most situations a decision, a choice among options, approval of a plan, allocation of resources, distribution of information that doesn't require discussion, or generation of options for future decision. The method is determined by the type. There is hardly ever a need for a meeting for the distribution of information. This effect of option generation is more likely to occur if the participants first write down ideas individually, as has been observed in brainstorming experiments since the 1980s groups of participants generate fewer different ideas than groups of the same size working individually.

FIVE STEPS ASK A MEETING TO DO

A simple system that makes meetings shorter, clearer and more productive.

Each step is a precondition or a closing condition that can be checked by someone who was not in the room.

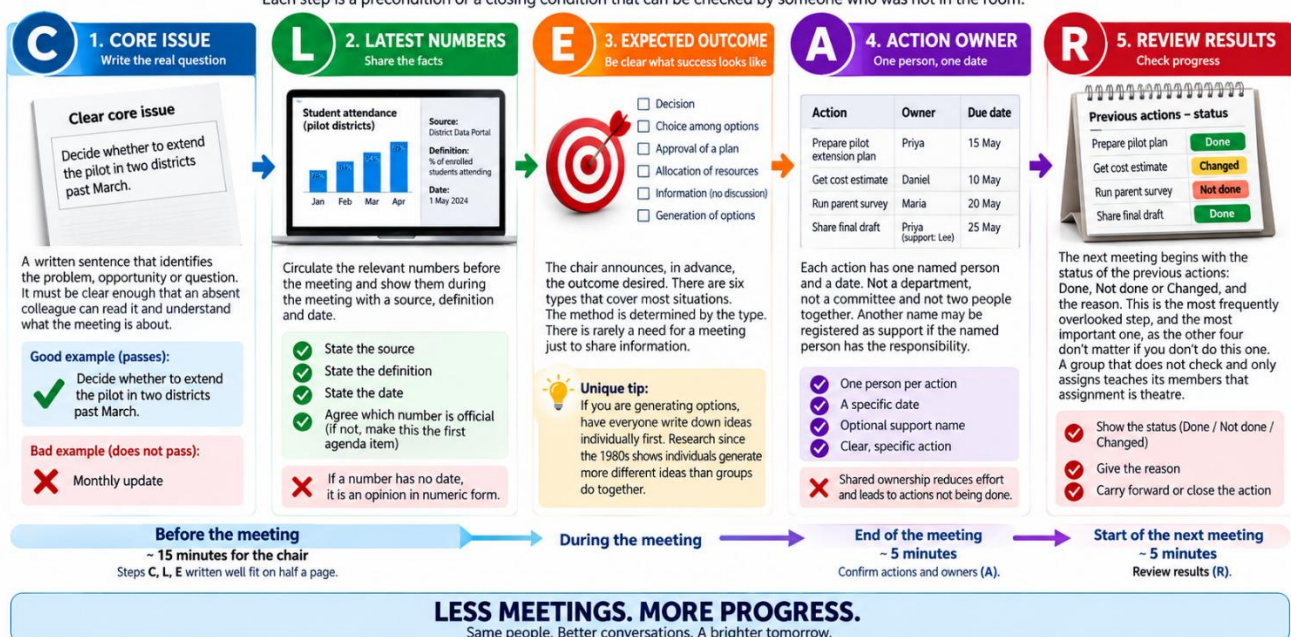


Fig -2: Five Steps Ask A Meeting To Do

Action owner: is the name of one person per action, and the date. Not a department, not a committee and not two people together. The social psychology literature has been studying the effect of reducing effort in group tasks for 50 years and shared ownership is no exception. Another name may be registered as support if the name that is registered has the responsibility.

Review results: the next meeting begins with the status of the previous actions Done, Not done or Changed, and the reason. This is the most frequently overlooked step, and the most important one, as the other four don't matter if you don't do this one. The group that does not check and only assigns teaches its members that assignment is theatre.

The sequence is low cost. The first three steps written well fit on half a page and take a chair 15 minutes to prepare. Two closing steps at the end of the session and two at the beginning of the next session 5 minutes.

5. GOAL CLARITY THE STEP WITH THE STRONGEST EVIDENCE BEHIND IT

There is the most empirical evidence for naming the central problem of the five steps. In 2010, a study was published in a Scandinavian psychology journal that analyzed eight of the most successful management groups, self-reported by participants, and rated by independent observers, and the groups were working through 56 agenda items. Clearly goal oriented items were correlated with task performance, relationship quality, and member satisfaction. The relationship between goal clarity and group performance was partially mediated by focused discussion, in that clear goals led to better group performance partly due to focused discussion.



Fig -3: Five Steps to More Effective Meetings

There's one thing in that study that is important for all meeting chairs to pay attention to. With a lack of clarity regarding a goal, when members voiced their concerns, the discussion focused more and both task performance and relationship quality increased. Members' task performance did not increase, and their relationship rating decreased when they spoke up when the discussion had gone off topic. It seems to help to ask the question what we are deciding here. It seems to come at a social cost to say we are off topic and there is no corresponding benefit. The real life application is that if there is drift, it is remedied by re-stating the goal, not by policing the discussion.

This can only be taken so far due to the sample size. One country and one organisational level is a small base from which to start 8 groups and 56 agenda items. The result aligns with decades of research on goal setting, which has found that it is specific goals, rather than general intentions, that focus attention

and effort and increase confidence although further research in other sectors and cultures is required. In 2024, field research on meeting design, as part of human computer interaction research, revealed that sometimes the same meeting goal was understood differently by the participants and that some meeting goals were deliberately not expressed. When a manager calls a meeting to review a colleague's understanding of a project, he or she doesn't usually include that on the invitation. Unstated purposes are not necessarily bad, but it is not possible to say if the meeting was successful no one knows if it was.

In 2025, a study of interviews with knowledge workers revealed that the ability to determine when a meeting has gone off track and to reprioritize when it has, is the ability to have a clear sense of what the goal is. Clarity is a measure stick. If not, the participants have no yardstick by which to measure the hour they spent in meeting, which could account for the poor ratings of satisfaction for meetings, even though attendance remains high. Before the meeting, the Chair should have a question formulated from this article, using a verb, and have it sent by the Chair.

6. BRINGING CURRENT NUMBERS INTO THE ROOM, AND THE INFORMATION GROUPS TEND TO WITHHOLD

Numbers transform the nature of a discussion, but not necessarily for the better. The second step is not decorative but useful as it has three requirements.

The first one is one definition per metric. Two departments will disagree on the reality of **active users** or **cases close** to different rules, not about what to do. Definitions should be in a written data dictionary, along with the calculation rule and the owner of the rule.

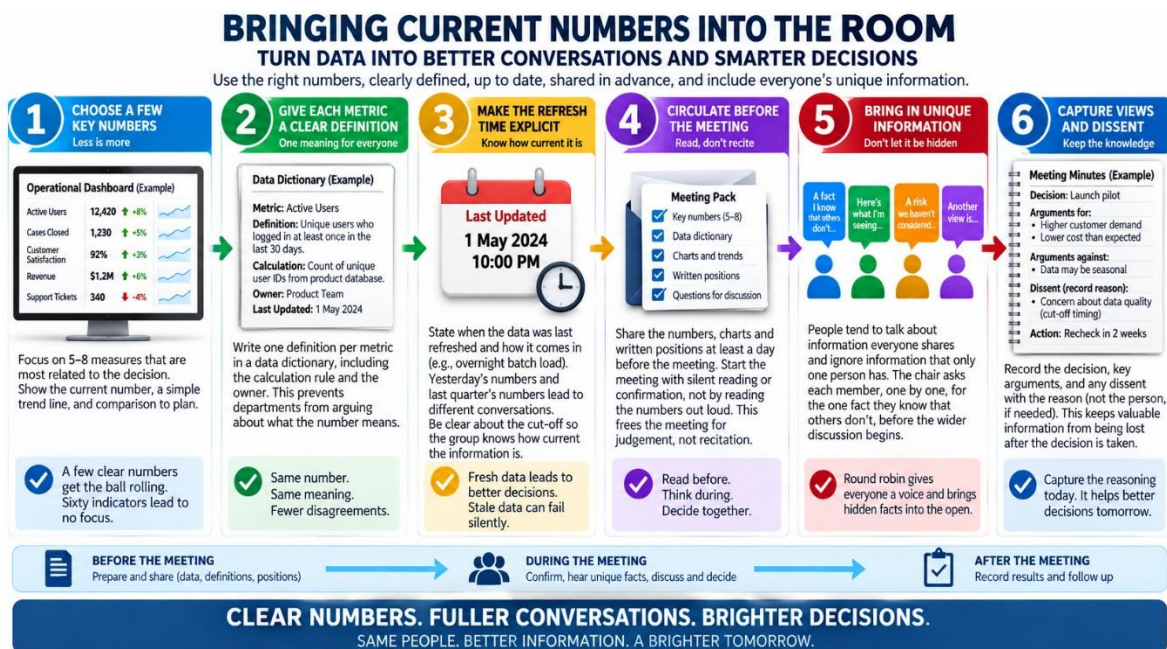


Fig -4: Bringing Current Numbers Into The Room

The other is a refresh time that is specified. A dashboard with yesterday's numbers is a different way to talk than a dashboard with numbers from last quarter. If the data is coming in via overnight batch loads, the group should be aware of the cut-off as decisions on stale data fail silently. The third is prior

circulation. The slowest possible way to transfer information is to read the numbers to the meeting. The opening of the meeting with silent reading or circulation a day before the meeting frees the meeting for judgement and not recitation.

There's a more nuanced issue that data visualizations don't address. Since the mid-1980s, a long series of experimental studies of group decision making have demonstrated that when group members have different information, they talk about the information that everyone has and ignore the information that only one group member has. The discussion is primarily about information that is shared and groups often come up with a worse conclusion than the information shared would suggest. The more visible the shared information is through dashboarding, the more the imbalance is exacerbated. The countermeasure is procedural the chair asks each member one by one for the one fact that they know, but others don't, before the discussion focuses.

Three practices that assist in normal environments. Round robin questioning allows everyone to have a chance to talk and to avoid the first member who is confident in speaking dominating the group. The written positions filed prior to the meeting have an impact on which facts are aired, by lessening the impact of seniority. The minutes should record dissent with the reason, if the culture requires this, instead of the name, which will preserve the information that would otherwise be lost when the decision is taken. Limits also are required for numbers. There is a group that looks at 60 indicators, and they look at none of them. Practitioner experience and management control research both suggests that there are a few measures that are related to the decision at hand, and the rest are available upon request. A five to eight figure list of figures with trend lines and comparison to plan will typically get the ball rolling for a recurring operational meeting, if someone can explain how these numbers are derived.

7. DECLARING THE EXPECTED OUTCOME, AND CHOOSING THE RIGHT KIND OF GATHERING

Saying what you want to happen does two things It informs participants of how to prepare it, and it allows the chair to determine whether a meeting is the appropriate tool to begin with.

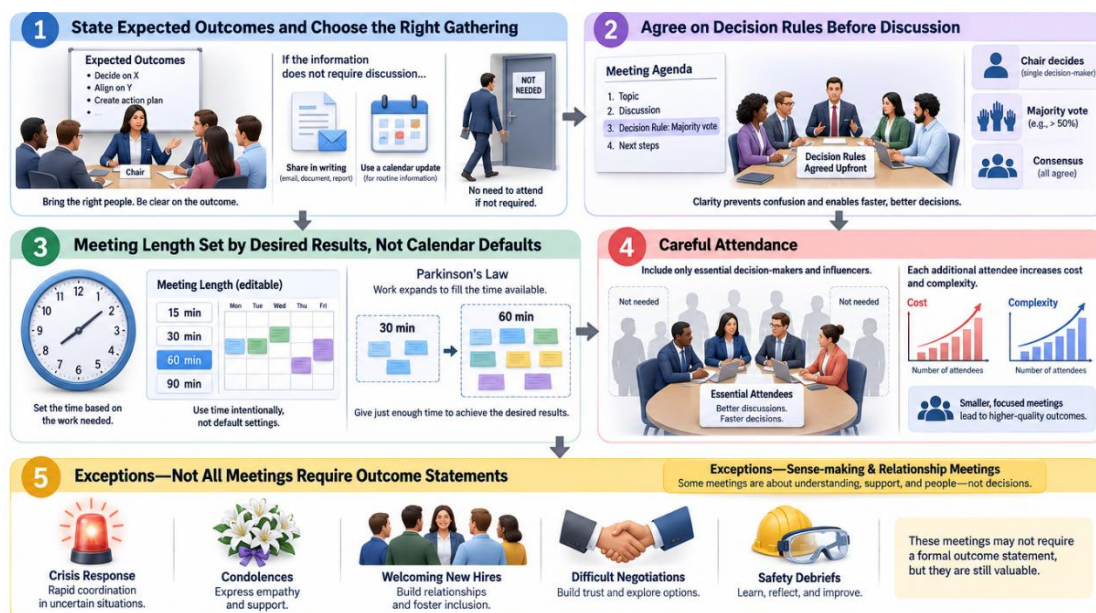


Fig -5: Defining Expected Outcomes and Selecting the Appropriate Meeting Format



Information that doesn't need to be discussed can be communicated more easily through written means and can be read at the desired pace and looked back on later. The same status meeting at the same time to report progress is a written document in a calendar. When you convert it, you will free up the hours and create a record for new hires to read a year later. Decisions must have a decision rule stated, this must be agreed to prior to discussion. Decision making the chair after hearing views, majority of members or consensus of the group, with a fall back if consensus is not reached. Groups that don't label the rule find it out by chance, typically when questioned about a decision weeks later. It only requires 1 line in the agenda to name it.

The length of a meeting should be determined by the desired results, not by the pre-programmed length of the calendar system. The 30 or 60 minutes durations are software conventions and not findings. In 1999, a controlled experiment was published in an applied psychology journal that compared groups of people who stood up to groups who sat down and concluded that the standing groups meetings were approximately one-third shorter, but there was no significant impact on the quality of the solutions they produced. The lesson is not to stand, everybody. It's that the time allotted dictates the time used, and that work expands to fill the time allotted, as was first described in 1955 and can be seen on any calendar. Attendance is the same The more people who attend the meeting, the higher the meeting cost grows linearly, and the more coordination losses grow than that, as speaking turns must be divided and side conversations increase. The basic guideline is that everyone who is there should be able to point to a component of the desired result that they can influence. The record may be given to those who have need to know.

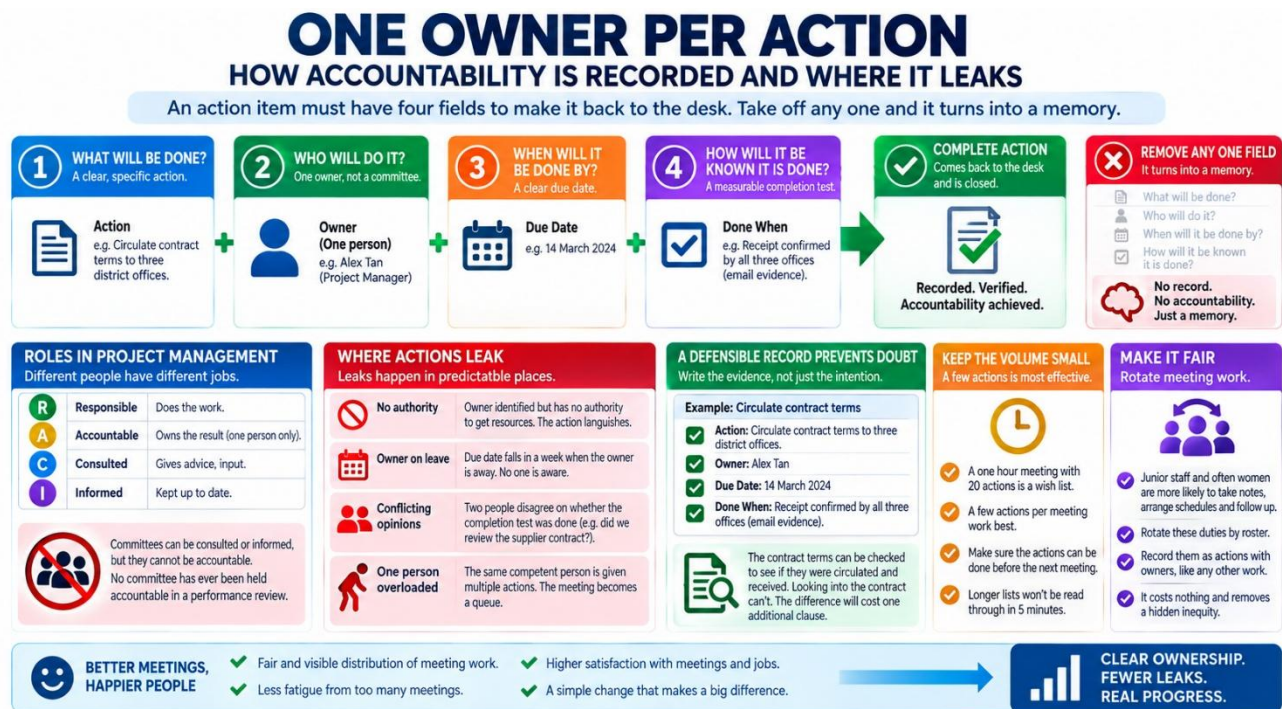
There are some meetings that don't go for this discipline, and they should. Outcome statements don't work in situations where there's a need for sense making after a crisis, condolence, welcoming new members, or a negotiation of a difficult relationship, or a safety debrief where blame needs to be set aside. To make all human events fit into a results template would be a misunderstanding of the method. The truthful answer would be that outcome statements are appropriate for the coordination meetings that most calendars are dominated by, and that a few meetings are useful because there's no decision to be made.

8. ONE OWNER PER ACTION HOW ACCOUNTABILITY IS RECORDED AND WHERE IT LEAKS

There are four fields that an action item must have to make back to the desk what will be done, who will do it, when it will be done by, and how it will be known as it has been done. Take off any one and it turns into a memory. In project management, responsibility assignment conventions have been around for decades and are used to differentiate the individual who performs the work, the individual who is responsible for the work product, the individuals who are consulted and the individuals who are informed. The conventions are applicable when one of the names is written in the accountable column. Committees can't be made accountable, no committee has ever been held accountable in a performance review.

Leaks occur in known locations. An owner is identified who has no authority to make the resources available, and the action languishes, no one is aware of it. Due date falls in a week that the owner is on leave. Two individuals have conflicting opinions as to whether the completion test was performed review the supplier contract. The same overloaded person is responsible for multiple actions since they is competent and available, thereby turning the meeting into a queue. Defensible record preempts the completion question. The contract terms can be checked to see if they have been circulated to the three

district offices by 14 March and if receipt has been confirmed. Looking into the contract can't. The difference will cost one additional clause. As important as the words are the volume. A one hour meeting has produced 20 actions that has produced a wish list. Practitioner experience suggests a few actions per meeting is most effective, and that these actions can be done before the next meeting, as a longer list will not be read through in 5 minutes.



The same end point was reached by industrial quality management via a different path. The plan do check act cycle, which can be traced back to the statistical quality work of the 1930s and was popularized in manufacturing in the post war era, incorporates review as the step that makes a trial some knowledge. The 2015 version of the international quality management standard calls for organisations to hold management reviews on a planned basis and specifies that inputs to the management review include information on the performance of the system and the outcome of actions taken because of the previous review, while outputs include decisions and actions. The fifth letter of the method is, for many companies, not a new but an existing obligation under the law The duty to close the loop.

CLOSING THE LOOP AFTER ACTION REVIEWS, MANAGEMENT REVIEWS, AND AUDIT TRAILS

Review what happened. Learn from it. Decide what to do. Do it. Check it. Record it. Repeat. A stronger, safer, better tomorrow.

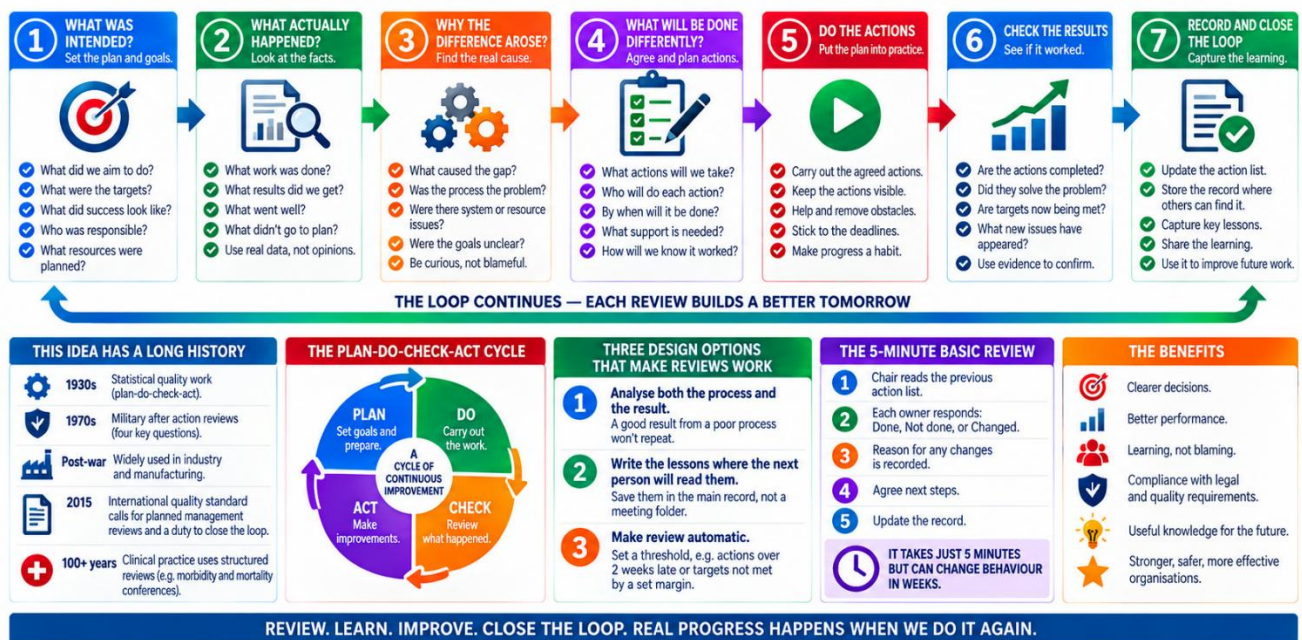


Fig 7: Closing the Loop From Reviews and Audits to Effective Action

A third model, clinical practice, is provided. Morbidity and mortality conferences are structured reviews of adverse outcomes and have been performed in teaching hospitals for more than 100 years. They have been found in a variety of systems and countries and presumably continue to be effective because they yield something, although the extent of their impact on outcomes is dependent on their operations.

There are 3 design options that make the difference between review that works and review that consoles. Critically analyse the process as well as the result, as a good result, from a poor process, will not repeat. Write lessons where the next person will read them, typically the document that a successor reads on his or her first day, not a folder named after the meeting. Make review automatic, by setting a threshold, e.g. actions over 2 weeks later, or targets not met by more than a stated margin, so that it does not rely on anyone being uncomfortable enough to raise it. The basic one takes 5 minutes. Chair reads out the previous action list, each owner responds with done, not done, or changed and the reason for any changes is entered into the record. Groups that do this regularly report a change in behaviour in weeks as the certainty of being asked changes what people commit to.

10. THE TECHNOLOGIES THAT NOW SIT BEHIND EACH STEP

Now each step is provided with software, mature, with varying failure modes.

Speech recognition transcribes the audio from meetings into text. Indeed, the accuracy in clean, single speaker recordings is much better than the accuracy of meeting recordings with crosstalk and accents, and the room noise, which is why research on meeting transcription has been based on dedicated corpora of recorded meetings of about 100 hours released for benchmarking in the mid-2000s. The problem of speaker diarization, i.e. the labelling of who spoke when, is the weaker of the two tasks. If a transcript is issued for a commitment to the wrong person, this will only cause a new issue to be raised and not resolve the issue.

THE TECHNOLOGIES THAT NOW SIT BEHIND EACH STEP

From meeting to real progress – simple technology, working together

Each step uses proven technology. It works well, but it can make mistakes. So we keep a human in the loop, use the right data, and follow the rules.

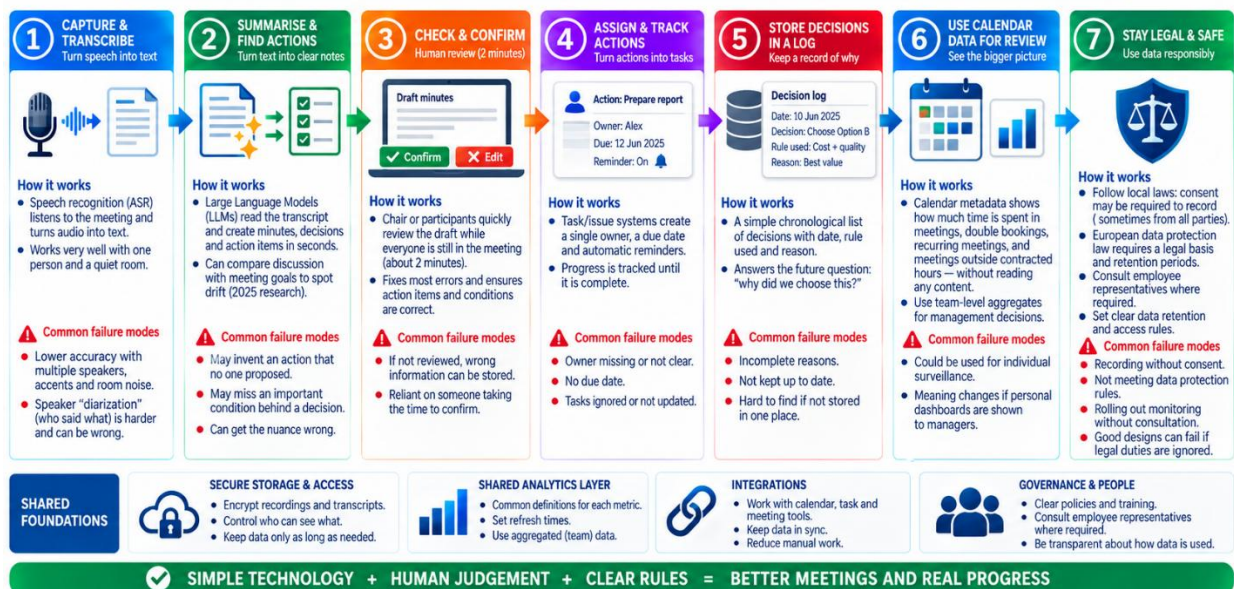


Fig 8: The Technologies That Now Sit Behind Each Step

Summarization using LLMs can generate readable minutes in seconds, but sometimes, it will generate an action item that nobody proposed, or an important condition that a decision was based on, will be missing. To treat the minutes created by the machine as a draft for the chair to confirm during the meeting while the people are still there takes only two minutes and eliminates most of the risk. In 2025 experimental systems took it a step further, indicating drift in the meeting by using the meeting goals as a reference point. The study was conducted with 15 knowledge workers, and the key result of the study was not about performance but about design gentle background signals that kept the participants on the goal, while interruptive prompts interrupted the discussion.

The costing and review steps are facilitated by calendar metadata. You can get aggregated data on the number of hours that people spend in meetings, double bookings, series of meetings that no one has seen, and meetings booked outside of contracted hours without reading anything. The same data could be used for surveillance purposes, and the reporting level is important. Team aggregates help in making management decisions. When individuals are shown a personal dashboard to managers, the exercise takes on a different meaning. Task systems contain the fourth step, assuming that the owner is required,

single valued and there is a due date that creates a reminder. The second step is to have shared analytics layers with a definition and refresh time for each metric. Decision logs are a simple chronological list of decisions made, including date, rule used and reason, and cost virtually nothing and answer the question that will be asked later why we chose this. Throughout legal responsibilities are applicable. In many jurisdictions, consent is required to record conversations and, in some jurisdictions, consent from all parties is required. European data protection law calls for a legal basis for the processing of recordings and transcripts and retention periods. Workforce monitoring measures must be consulted with employee representatives prior to deployment in a few countries. All of these can make an otherwise good design go down the drain.

II. COUNTING WHAT MEETINGS COST, WITH ARITHMETIC ANY ORGANISATION CAN REPEAT

The cost of meeting is elementary school math that very few people do. The method requires three inputs the number of participants, the time including preparation and travel and a loaded hourly labour cost salary plus employer contribution, benefits and overhead.

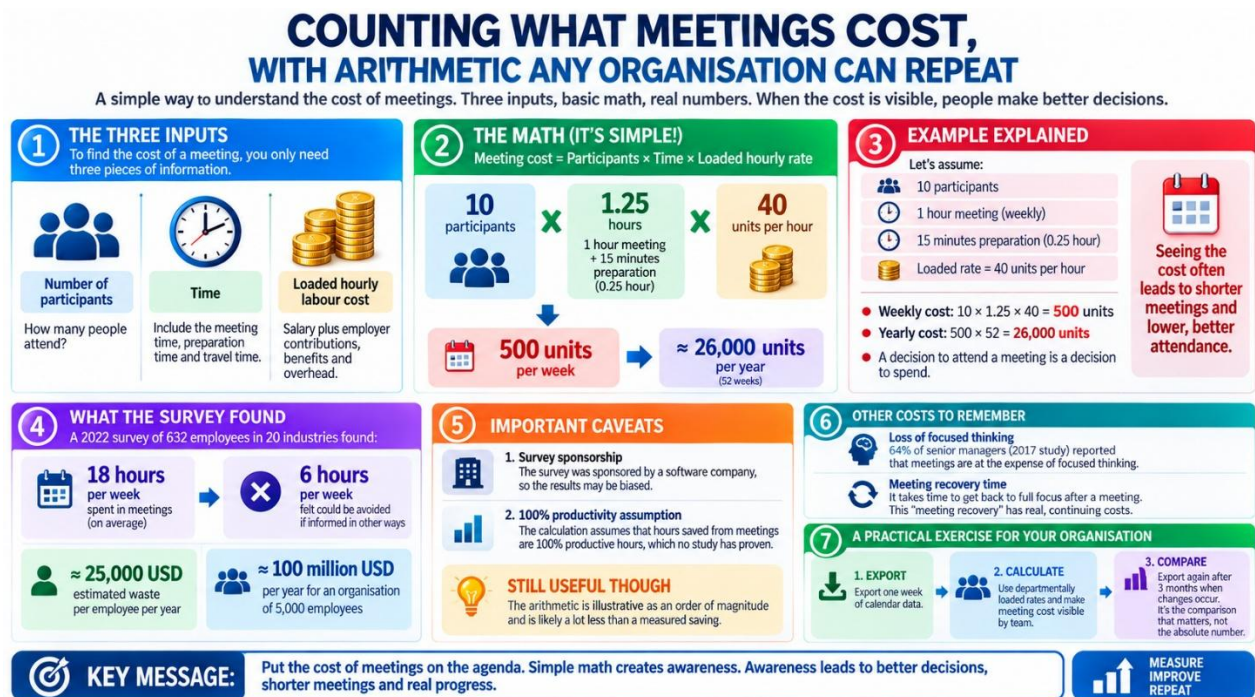


Fig 9: Counting What Meetings Cost

Let's assume 10 participants, an average loaded rate of 40 units per hour, a weekly meeting of 1 hour and a preparation time of 15 minutes. The direct cost is 500 units per week, and approximately 26,000 units per year. Those organisations that put this figure on the agenda of regular meetings claim that the figure itself makes a difference to attendance and meeting time a decision to attend is a decision to spend.

Extrapolations to organisational totals published should be interpreted with caution. The 2022 survey of 632 employees in 20 industries found that on average, they spent 18 hours a week in meetings, and on average, they felt about six hours of that time could be avoided if they were able to be informed in other ways. Using salary figures, the researcher came up with an estimate of waste of approximately 25000

USD per employee per year and approximately 100 million USD per year for an organisation of 5,000 employees. There are two caveats which alter the use of this. The survey was sponsored by a software company, and the computation assumes that the hours saved from meetings are 100% productive hours, something that no study has proven. The arithmetic is still illustrative as an order of magnitude and is a lot less than a measured saving.

There is no shortage of estimates of how much money a single manufacturer's development unit spends annually on meetings, nor are there any dearth of figures on the billions of dollars spent nationally. This is because those national totals are from commercial surveys and not from any national accounts series, and because there is no national accounts series that measures meeting time. This article does not repeat the folly of using them as if they were official statistics. Indirect costs are actual, but it is more difficult to determine a price. Most calendars are broken up into little bits, and 64% of the 2017 study's senior managers reported that meetings are at the expense of focused thinking. The time needed to recover from a meeting after it concludes has been researched as meeting recovery and has been shown to have continuing costs. Workable internal exercise is a one week exercise. Export calendar data, use departmentally loaded rates, make meeting cost visible by team and export again after 3 months when changes occur. It is the comparison that is important and not the absolute number.

12. HOW THE MONEY MOVES THE COMMERCIAL LOGIC OF MEETING SOFTWARE AND TRAINING

Meetings enable a range of commercial activities that have different revenue models, and it's important that buyers know the revenue models that they are purchasing.

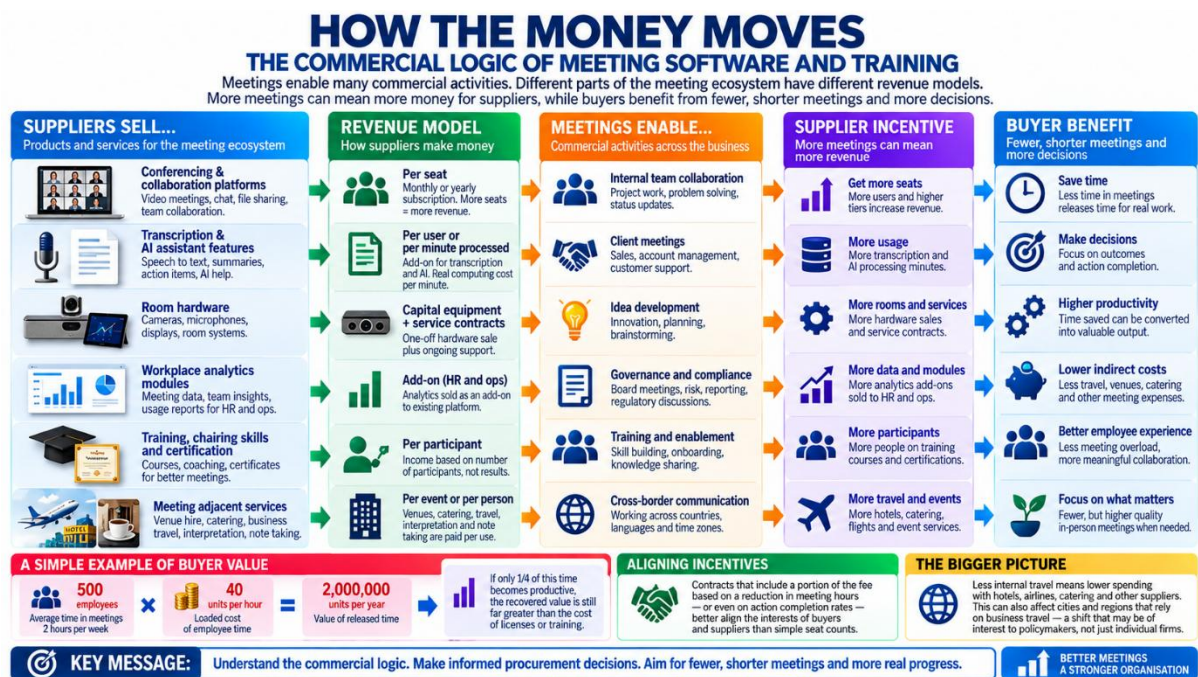


Fig 10: The Commercial Logic Meetings Software and Training

Conferencing and collaboration platforms are sold on a per seat basis, on a monthly or yearly subscription. The more seats, and the more paid tiers, the more revenue so the incentive is to get more seats, not less meeting. The transcription and assistant features are generally sold as per user add on or



per minute processed as there is a true marginal cost in the computing of the speech and language models. Room hardware is sold as capital equipment, with service contracts. The workplace analytics modules are offered as an add-on to the HR and ops departments. Training, chairing skills, and certification are offered on a per participant basis, and the income is based on the number of participants and not on results. As there are many published estimates of the size of these markets, depending on which categories are included, no figure is quoted here. The structural point is not accompanied by a point. The more meetings the more money the parties selling the meeting technology make, and the less and shorter the meetings are, and the more decisions are made, the more interested the buyer is. It's not a crime that misalignment exists, but it should influence procurement. Contracts which include a portion of the fee based on a reduction in meeting hours, or even on action completion rates, better align the two parties than do seat counts.

Buying organisation's return logic is simple and is not usually worked out. Assume that the average time spent on meetings for 500 employees in a company is 2 hrs/wk and the loaded rate is 40 units per hour. The value of the released time is approximately 2 million units a year. Even if only $\frac{1}{4}$ of that time is converted into output, the recovered value will be far greater than the cost of a license or a training programme. The truth in that sentence is the conversion assumption, which is unconfirmed and should be determined locally, not by a vendor. The secondary market for meeting adjacent services is of course venue hire, catering, business travel, interpretation and note taking services. Less travel for internal coordination results in less spending with those suppliers, and in some instances less spending on software and in some cases, fewer, but longer, in-person meetings for work that requires them. That's a shift that can be of interest to policymakers in cities that rely on business travel, and which is typically only considered as a saving for the firm.

13. EVIDENCE FROM WORK WHERE MISTAKES ARE COUNTED SURGERY AND FLIGHT DECKS

The most compelling proof that structured meetings make a difference is in places where failure has a tangible impact on lives, such as deaths and injuries.

In 2009, a nineteen item surgical safety checklist was introduced in eight hospitals in eight countries, both high and low income. At three points, the checklist called for the team to pause in a briefing before incision, team members introduced themselves and confirmed the patient and procedure, and anticipated problems after the incision, the team paused to check the procedure and the patient's positioning. The mortality rate dropped from 1.5% to 0.8%, and the rate of in-hospital complications dropped from 11.0% to 7.0% when comparing the rates of these complications before and after implementation in nearly 8,000 patients. Subsequent research has had mixed findings, and the discrepancy can be attributed to whether the checklist was used as a conversation or as a paper and pencil task. That's the finding that's most pertinent here. None of the items were new medical information. The gain was brought about by a short, structured exchange with a stated purpose, named roles and an explicit check. Commercial aviation has made the same determination following many accident investigations in the 1970s and 1980s that repeatedly revealed that crews possessed the information to avoid a crash but failed to make it available in the open. Crew resource management training based on pre-flight briefings, specific challenge protocols, and standard callouts, and is now a regulatory requirement for airline crews in major jurisdictions. Briefings involve the distribution of roles, the order of events and allow a junior to interrogate a senior. The correlation with the discovery of speaking up when the goal is not clear is direct.

EVIDENCE FROM WORK WHERE MISTAKES ARE COUNTED SURGERY AND FLIGHT DECKS

Structured meetings and checklists save lives. The same simple process can make any team safer, smarter and more successful.

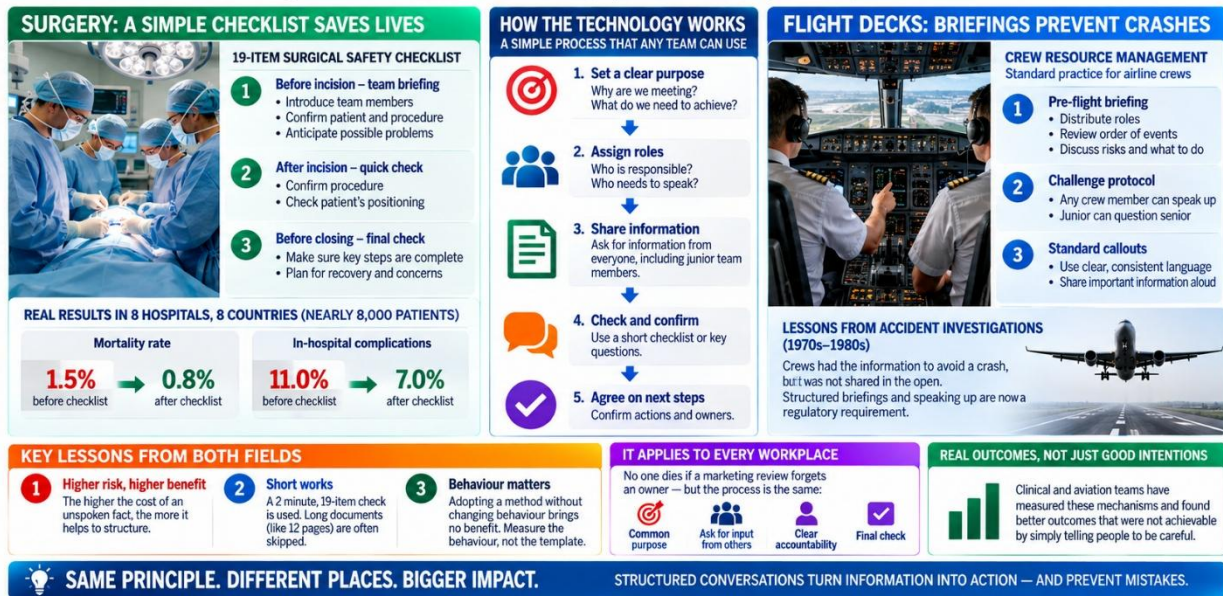


Fig 11: Evidence From Work Where Mistakes Are Counted

There are three lessons that can be taken from these fields and applied to other fields. The higher the cost of an unspoken fact, the more it helps to structure. Short beats long, a nineteen item check takes 2 minutes, a 12 page protocol is skipped. Adopting a meeting method without changing behaviour is of no benefit to an organisation that adopts a meeting method which should measure the behaviour, not the template. An obvious difference is office work. No one has ever died due to a marketing review that did not have an owner on an action item. It's not about money, it's about the process of common sense of purpose, intentionally asking for information in the hands of another, clear accountability, and a final check. In those instances where clinical and aviation teams have measured those mechanisms, they have found effects on outcomes that were not achievable by exhortation.

14. PUBLIC BODIES AGENDAS, MINUTES, AND THE CITIZEN'S ABILITY TO FOLLOW A DECISION

The public sector is a good test bed and source of transferable practice as government meetings already work in a manner like the five steps.

Open meeting laws in many jurisdictions mandate that an agenda be published in advance, only allow discussion of items on the agenda and require minutes to be published that document decisions. A California law passed in 1953 mandates that an agenda be published at least 72 hours prior to a regular meeting of the legislative body of a local agency, and that an agenda item be briefly described generally prohibits action on any item not included in the agenda. The intent is democratic, but the impact is the same as for the first and third steps in the method an identified issue and an expressed hoped-for action, which is set in advance of anyone sitting down. Many national and subnational governments make committee agendas, papers, and minutes available online and freedom of information regimes enable citizens to ask for records where they are not available. This provides a level of accountability which is not generally offered by private organisations. A citizen can see the actions taken by a planning committee,

the reasons and the instructions given to officers.

There are gaps and they are instructive. Minutes of published are often only published with decisions and not with the date of when a decision is to be implemented or the action owner. The next agenda is the fifth step that is often missing in progress against previous decisions and is the most consequential meeting a community has. Audit institutions check expenditure and legality, and they hardly check whether decisions made in minutes are implemented. A small change would be to publish along with the agenda, a table of open decisions with owner and status, per set of minutes. The administrative and small cost. Residents' gain is straightforward.



Fig 12: From Agenda to Action

A parallel of interest is the development practice. Whether money is disbursed in a cooperative society, a written minute detailing the responsibilities of those involved is usually a deciding factor, as is whether grievance is traceable and whether a member can later challenge a decision, in the case of a village council or self-help group. In such environments the record isn't convenient for administration. This is the only proof that the Member has. Simple, standard formats in the local language that can be read aloud for those members who are not able to read are more useful than software. The implication for public administrators is not so much technological as procedural. The obligation to publish an agenda already exists in many places in the law. The same responsibility should be extended to actions and statuses, thus completing the loop.

15. WORKING HOURS, HEALTH, AND THE HOUSEHOLD EFFECT OF SHORTER AGENDAS

Meeting load is not just a productivity problem, it is a working conditions problem and the evidence for this effect is sufficiently dated to be agreed upon in outline.

In 2005 and 2006 studies were published that showed a correlation between the number of meetings attended per day and the subjective workload and fatigue experienced by the person attending the

meetings, which was dependent on the perceived usefulness of the meetings. The 2010 study revealed that even when other factors such as pay, promotion, work and colleagues were considered, employees satisfaction with their meetings predicted their overall job satisfaction. Meetings, that is, are far from an empty vessel for work. These are a part of the job. From 2021, there were continued reports on videoconference fatigue, and various mechanisms were suggested, such as increased cognitive effort in reading nonverbal cues on a screen and lack of physical movement, as well as increased close range eye contact. This fatigue was then measured using validated survey scales. The changes are simple and low-tech default to audio for regular check ins, disable self-view, set time limits between meetings, and limit meetings to 50 minutes, allowing people to get up and drink water.

Effect on the household is not given sufficient attention. Late day or across the time zone meetings cause individual work to be done late in the day. In 2020, a working paper citing data from a large sample of workers when they switched to remote work found that the average number of meetings per person increased and the average meeting length decreased, and that the length of the working day increased by about 48 minutes. The paper is not peer reviewed and it is not a measure of effort, but of activity windows, so this figure should be considered as an indicator of direction. No one who has ever made room in the dinner table for a 6 p.m. phone call doesn't know the drill.

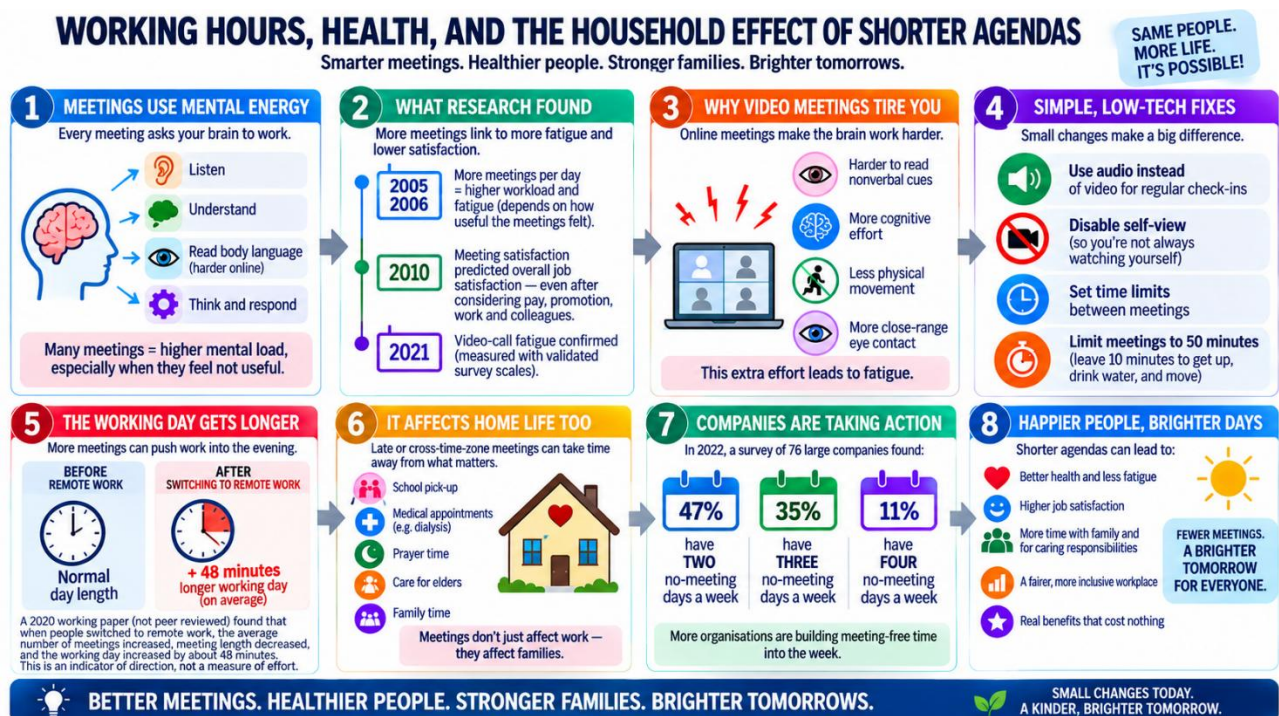


Fig 13: Working Hours, Health And the Household Effect of Shorter Agendas

So, it's also a caring responsibility concern to reduce the meeting load. The recurring meeting is in the same time frame as school pick-up and dialysis appointments, prayer time, and care for elders. The core hours of meetings, a day a week or half a day without meetings and documenting the decisions in writing so that those with the least control of their schedule are not at a disadvantage are practical steps that cost nothing and benefit the people with the least control of their schedule. In 2022, a survey was done with 76 large companies to see how far organisations will go on this 47% had introduced two no-meeting

days a week, 35% three days and 11% four.

16. NATIONAL PRODUCTIVITY WHAT COULD BE GAINED, AND WHAT CANNOT YET BE MEASURED

Labour productivity is the output per man hour. Both of those ratios are impacted by meeting practice, and national statistics don't capture either in a form that can be used. Official productivity measures, such as the internationally comparable measures of gross domestic product per hour worked, measure hours worked and value added. Meeting time is not a category that is published by any statistical agency. Time-use surveys measure hours of activity in work, and do not usually distinguish between work hours spent in meetings and other work activities. The upshot an activity that is estimated to take about six hours per week for workers and up to 23 hours per week for managers is not accounted for in the way governments measure economic activity.

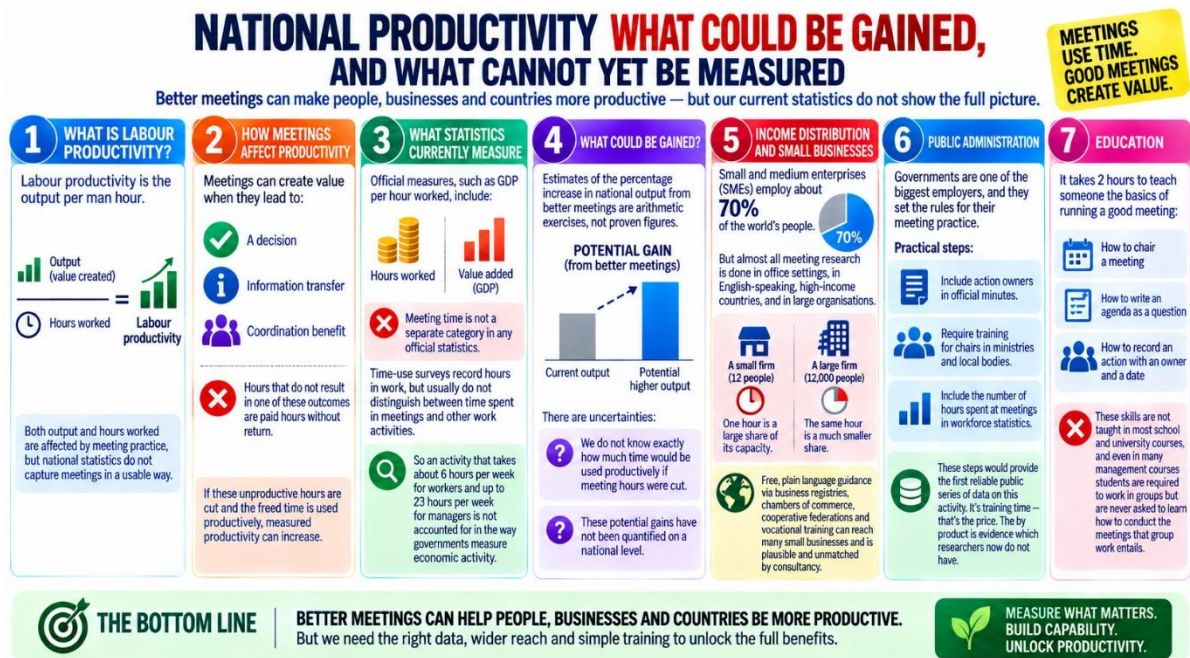


Fig 14: National Productivity Potential Gains and What Remains Difficult to Measure

Only that which is responsible can be said. Any hours spent on a meeting that do not result in a decision, information transfer, or coordination benefit are paid hours without return and thus cutting back on these hours increases measured productivity, if the free hours are used productively. There are uncertainties in both of those statements and the second has not been quantified on a national level. At present, estimates of the percentage increase in national output that could be achieved by better meetings are arithmetic exercises. The distribution of income is relevant to policy. It has been estimated that small and medium enterprises SMEs employ approximately 70% of the world's people, but almost all meeting research is conducted in an office setting in English speaking high income countries, and in large organisations. The same hour is a higher percentage of the capacity of a small firm of 12 people than of a large firm of 12,000 people; a badly run weekly meeting is therefore a greater burden on the small firm. The reach of free, plain language guidance provided via business registries, chambers of commerce, cooperative federations and vocational training is plausible and unmatched by consultancy.

The second level is Public administration. In most countries, governments are one of the biggest employers, and they determine the rules which govern their meeting practice. If action owners had to be included in official minutes and training chairs in ministries and local bodies were required, and if the number of hours spent at meetings were to be included in workforce statistics, this would provide the first reliable public series of data on this activity. It's training time, that's the price. The by product is evidence which researchers now do not have. Education is the third one. It takes 2 hours to teach someone to chair a meeting, write an agenda as a question, and record an action with an owner and a date. They are not taught in most school and university courses, even in many management courses students are required to work in groups and are never asked to learn how to conduct the meeting that group work entails.

17. WHERE THE METHOD FAILS, AND WHAT SHOULD NOT BE USED FOR

Advertising is a technique that's introduced without its restrictions. This one has four. Bundle is not tested. There is evidence for individual components with the most widely institutionalised being the goal clarity review, which is the best supported and structured review. The five letters have not been tested in combination with a control condition and the quality of the decisions, completion of actions and employee wellbeing have not been measured over time. The procedure is both reasonable and inexpensive. Not demonstrated as presented.

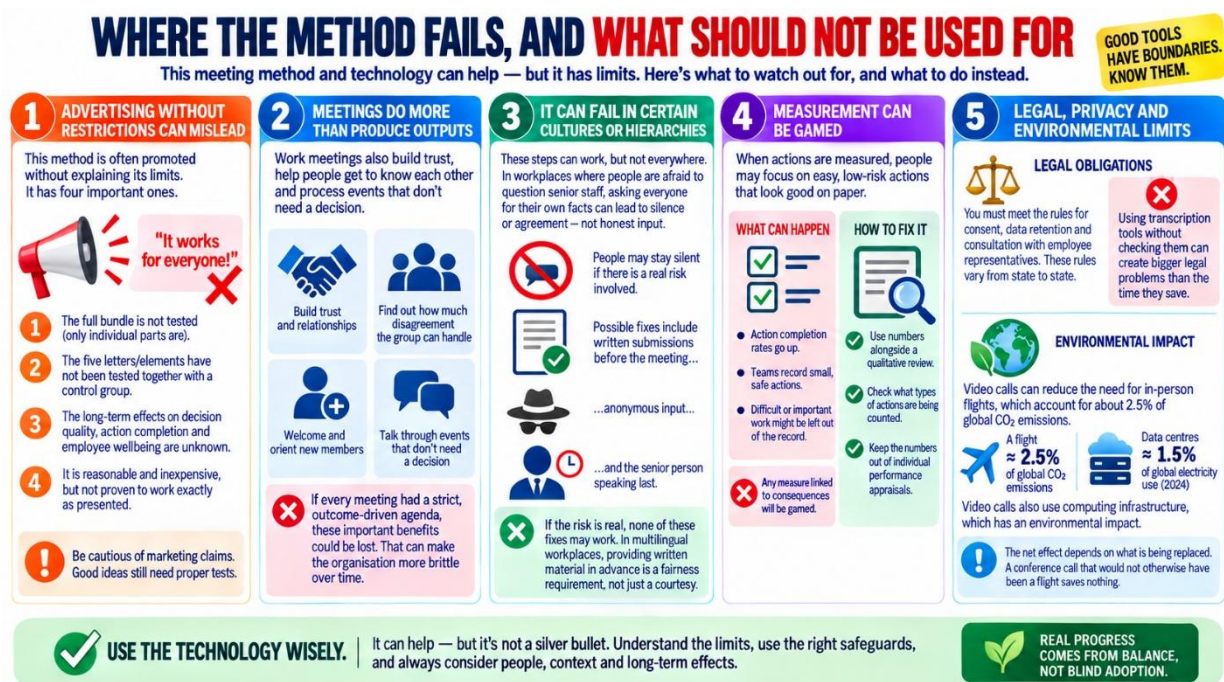


Fig 15: Method Limitations and Appropriate Use Cases

Work meetings can supplant the work they do, in addition to outputs. Groups meet to establish trust, to gauge the tolerance for disagreement within the group, to orientate new members and to process events that don't have a decision. If every meeting had an outcome driven agenda, that would stifle that and the impacts would be felt later as brittleness, not as a line item in a productivity report. The result that management groups relationship quality was negatively affected by pointing out drift is a cautionary tale against imposing structure too readily. These steps can be effective in the context of culture and

hierarchy. If a workplace has a real risk of being in trouble for asking a question of a senior person, asking each member for the fact they has on his own will result in silence or agreement. The fixes are known and include written submissions prior to discussion, anonymous input, and the senior speaking last. If the risk is real, none of them works. The same clarity requirement is more onerous in multilingual contexts and is a fairness measure, not a courtesy, to provide written material in advance.

The object of the measurement can be the thing. Rates of action completion go up, and teams learn to record small, safe actions that close safely and difficult work moves out of the record. Any sign which is linked to consequences will be dealt with. The countermeasure is to make the numbers go hand in hand with a qualitative assessment of what types of actions are being counted, and to remove the numbers from individual appraisal. There are two other limitations that should be noted. There are legal obligations to be met for consent, retention and consultation with employee representatives which vary from state to state, and an organisation that implements transcription without verifying the tools may end up with liabilities that are greater than the time saved. Environmental claims require care, as well. Video calls instead of in-person meetings eliminate the carbon dioxide emissions of in-flight travel which accounts for about 2.5% of the world's total carbon dioxide emissions and the computing infrastructure required for video calls also has an impact the International Energy Agency estimates that data centres use approximately 1.5% of global electricity in 2024. The net effect is dependent upon what is being replaced, and a conference call that would not otherwise have been a flight saves nothing.

18. TESTING THE FIVE STEPS A NINETY-DAY DESIGN ANY ORGANISATION CAN RUN

The five steps to better meetings is something that can be tested in one organisation in 1 quarter at virtually no cost and see the impact on the outcomes of meetings. The design below is provided so that readers can draw conclusions, not make assumptions.



Fig 16: Testing the Five-Step Framework A 90-Day Implementation Plan for Any Organization



Identify at least 12 regular meetings that are of a similar nature, size, and frequency. Randomize the meetings, and half to adopt the five steps, half to remain unchanged contamination is certain if randomising by person, since each person is sitting in several meetings. If randomisation is not considered acceptable by management, stagger adoption, with each series eventually adopting and acting as its own control, and the order in which they are adopted is random. Take 4 weeks of baseline data prior to any changes. There are four basic measures that are all that is needed. Action completion rate is the percentage of actions that have been completed by their scheduled date on the record, have a named owner and have a completion test recorded when the action was assigned. Decision traceability is the percentage of decisions where there is a written record that identifies the issue, evidence used, the rule applied and the person who is responsible. Time to decision is the time between the first time that an issue is placed on an agenda and a decision is recorded. The total number of meeting hours per participant is derived from the export calendar and is only reported at the team level.

There are two secondary controls that are used to prevent gaming. An anonymous monthly rating of the outcome of the previous meeting, using a scale to test whether behaviour changed or only paperwork, indicates whether behaviour changed or not. Migrating out of the record as completion rates are reported upward when an independent reading of a random sample of 20 action items per period is done and scored for substance, not count. Instead of analysing the change within adopters, analyse the difference in change between adopters and control series as a change in load for many reasons occurs across a quarter. Express direction and strength of effects with uncertainty and report null effects. However, no one organisation will have enough power to detect small effects, and the practical use will be to pool across organisations, with shared definitions of measures, and to do that will require some consistency of measure definitions. Those definitions are the most needed ones that the research community can make at this time. There are three safeguards and they are not optional, they are conditions of ethical behaviour. Data on participation needs to be rolled up to team level prior to it being viewed by any manager. The employees, one or both their representatives, should be told what the measures are, and why they are being taken, prior to the start of baseline collection, and formally consulted in some of the jurisdictions surveyed. Results cannot be used as part of individual performance appraisal, as soon as they become part of an individual's performance appraisal, they cease to be a measure of behaviour that they were designed to measure.

19. RESEARCH GAP

There are four gaps which stand out and can be addressed.

No official time measure of meeting. National statistical offices report on hours worked and output per hour but none of the countries has a regular series reporting the hours worked in meetings and in individual work and other activity. The estimates of the number of meetings that occur in one country each day range from 11 million to 55 million, which is a factor of 5, and is not acceptable for any measured economic input. A few questions could be introduced in the current labour force or time use surveys to obtain the first credible baseline. Until that's in place, all national claims of waste are based on vendor surveys that have self-selected samples.

Self-report, cross-sectional is the predominant type of evidence on meeting practice. Evaluations of meetings and productivity are done at the same time by the same participants, making it difficult to differentiate cause and effect. Random assignment field experiments are not common, in part because organisations are not too keen on randomising something as obvious as a calendar. Before and after pulse surveys not controlled comparison were used in the studies of no meeting days including the 2022



survey of 76 large companies. The specific question is whether a stated core issue, a circulated data pack, a declared outcome, one named owner per action and a review at the next session increases the proportion of actions completed on time, and whether it improves the quality of the decision, independently of the decision makers.

There is limited development of outcome measures. Most research relies on participant satisfaction, which is readily available and only somewhat related to decisions made or actions taken. All four are measurable, but there is no agreed definition for any, and no instrument with published reliability. There are no validated measures therefore it is not possible to make comparisons across organisations and countries.

The evidence base has limited scope of people covered. Samples are biased towards larger, office organizations in high income, predominantly English speaking countries, and towards managers than frontline workers. Most workers are in small enterprises. In hospitals, transport, retail and manufacturing, short handover meetings are held between shift-based teams, have high consequences and have received virtually no research attention. In low and middle income countries, access to credit, water and services is decided in meetings which are organised by cooperatives, village councils, schools, and other public agencies, but studies of such meetings are limited to project reports.

There are two policy gaps that ensue. Even though there are published connections between meeting load and daily fatigue, occupational health regulation does not touch on meeting load, but rather working hours, rest breaks, and screen work. Many settings need minutes for audit and inspection regimes and there is often no need for evidence of the implementation of decisions recorded in minutes. Both closures would be low cost and would produce information which is not available.

20. CONCLUSION

One of the biggest discretionary costs in most organisations is meeting time and this is one of the least examined costs. The five steps outlined here are naming an issue, assigning dated numbers to the group, stating what the hour is supposed to produce, assigning one person to each action and checking the actions at the next session. These are all low cost, verifiable by an external observer, and based on published literature clarity of goal and task performance in management teams, group tendencies to ignore information possessed by a single member, reduction of effort when the work is shared, and structured review institutionalised in quality systems, military training, and clinical practice.

The evidence that supports is less than what is often suggested. There is small sample empirical support for Goal clarity. Measurable outcomes in surgery were improved death rates reduced from 1.5% to 0.8%, and complications reduced from 11.0% to 7.0% after the implementation of structured briefings in eight hospitals across eight countries and this improvement was found to be dependent on the briefing being a conversation, not a form. Figures on wasted meeting time costs are largely from commercial surveys and are based on the assumption that released time equals output, which has yet to be proven in any study. When a total for national waste is quoted it should be qualified with the source.

What is still to be done is measurable. Labour and time use surveys can be supplemented by statistical agencies with the time spent on meetings, which would no longer be estimated as a 5-fold range, but would be measured. Researchers can conduct controlled field trials of the five steps, as a package, with action completion and independently assessed decision quality as outcomes, and can scale up to small firms, shift teams, and public bodies outside high income countries. Regulators can consider meeting



load as a working conditions issue and insist on minutes being published which include an owner and a status for each decision. Organisations can do something simpler in a quarter export calendar data, put in local loaded rates, and then follow the five steps for recurring meetings and export data again to see if hours and the completion rates have shifted. A group that writes their main issue as a question includes figures, a date, and a source, and then includes the status of the previous session at the start of the next session, will create a record that someone can look at. It's a humble bar. It is not held at most meetings and there is no reason why it should not commence next week.

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